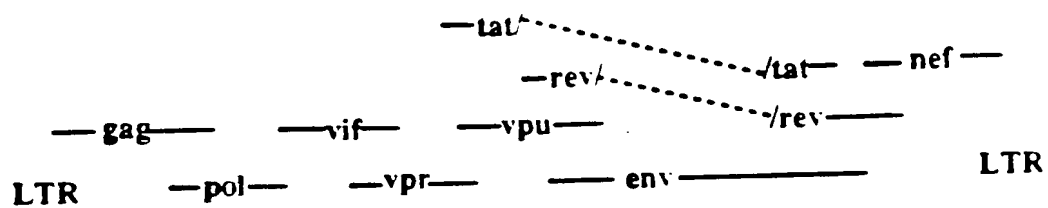
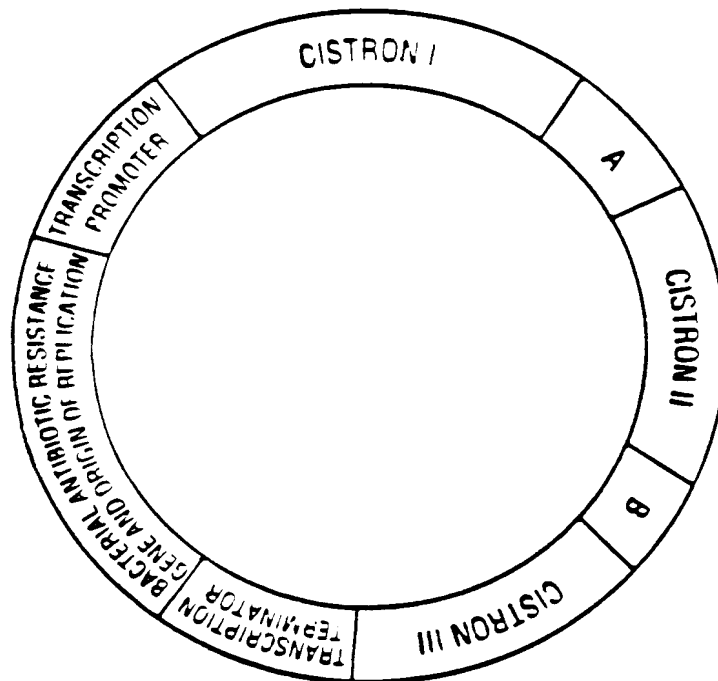


FIGURE 1



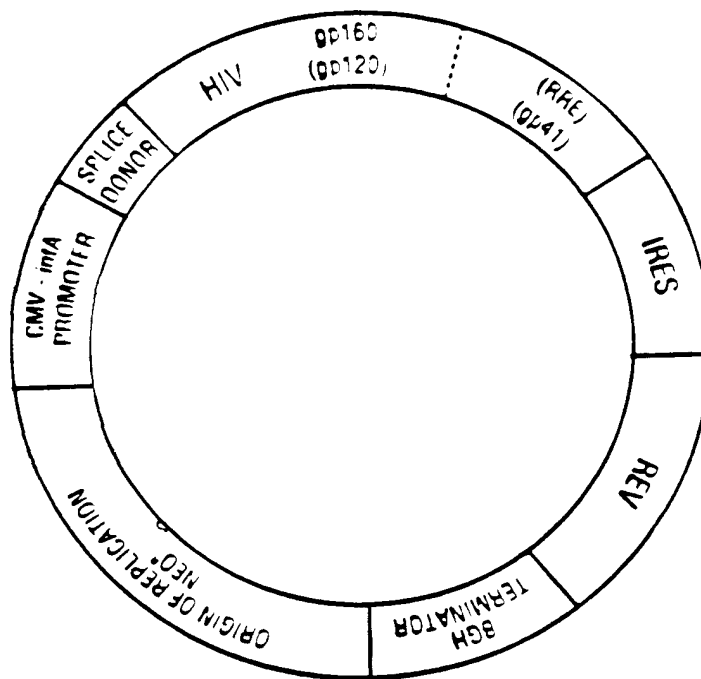
2/27

Figure 2



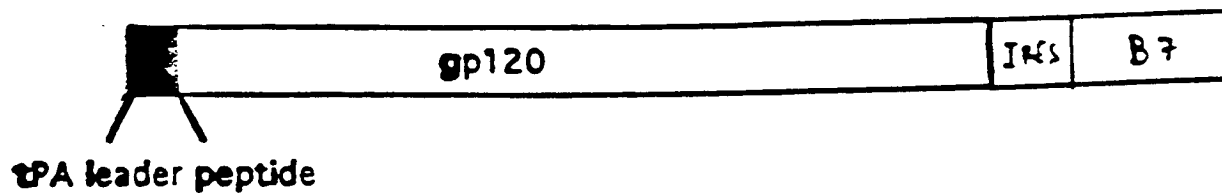
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Figure 3



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tPA-gp120 (V1Jns-tPA-gp120)



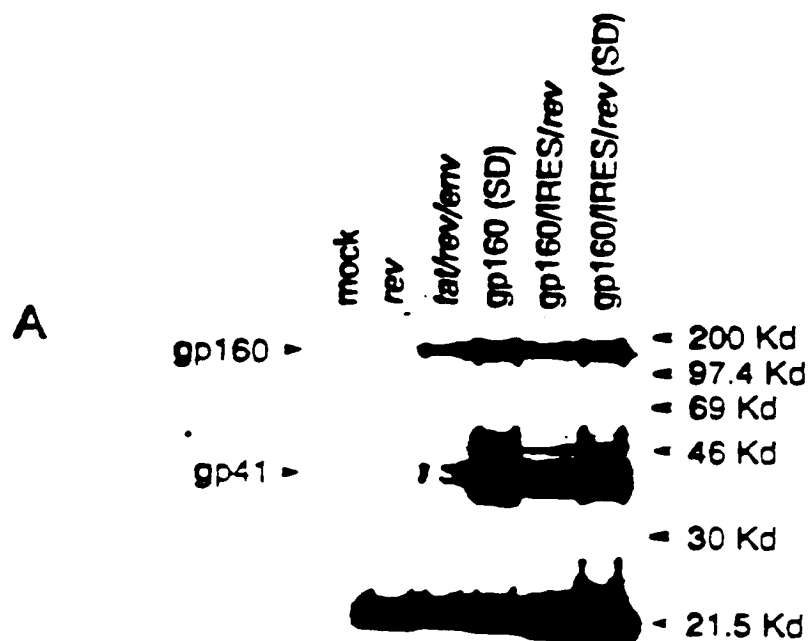
gp160/rev dicistronic construct
(V1Jns-gp160/IRES/rev/SD)



HIV gag /rev Dicistronic Construct Schematic



with *rev*
added in trans



without *rev*
added in trans

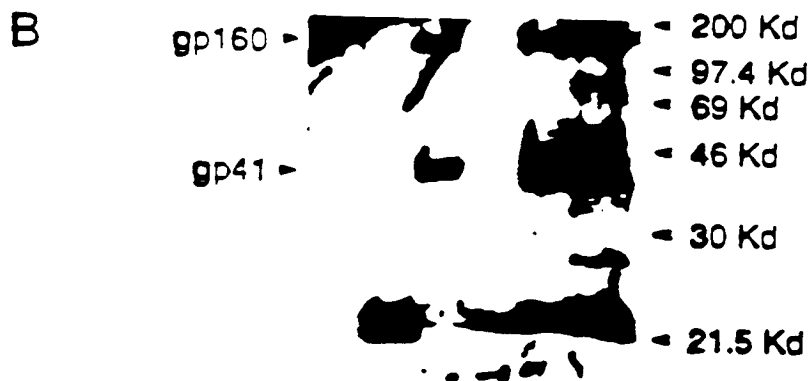


Figure 6: V1J.Sequence, SEQ. ID:12:

1 TCGCGCGTTT CGGTGATGAC GGTGAAALAC TCTGACACAT GCAGGTCCCG
51 GAGACGGTCA CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAAGCCCG
101 TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG TCGGGGCTGG CTAACTATG
151 CGGCATCAGA GCAGATTGTA CTGAGAGTGC ACCATATGCG GTGTGAATA
201 CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGATTGG CTATTGSCCA
251 TTGCATACGT TGTATCCATA TCATAATATG TACATTTATA TTGGCTCATG
301 TCCAACATTA CCGCCATGTT GACATTGATT ATTGACTAGT TATTAATAGT
351 AATCAATTAC GGGGTCATTA GTTCATAGCC CATATATGGA GTTCCGGGTT
401 ACATAACTTA CGGTAAATGG CCGGCCTGGC TGACCGCCCA ACGACCCCGG
451 CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAAGC CCAATAGGGA
501 CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGAAC TGCCCCATTG
551 GCAGTACATC AAGTGTATCA TATGCCAAT ACGCCCCCTA TTGACSTCA
601 TGACGGTAA TGCCCCGGCT GGCATTATGC CAGTACATG ACCTTATGGG
651 ACTTTGCTAC TTGGCAGTAC ATCTACGTAT TAGTCATCGC TATTACCATG
701 GTGATGCGGT TTTGGCAGTA CATCAATGGG CGTGGATAGC GSTTTGACTC
751 ACGGGGATTT CCAAGTCTCC ACCCCATTGA CGTCAATGGG AGTTTGTTTT
801 GGCACCAAAA TCAACGGGAC TTTCCAAAAT GTCGTAAACA CTCGGCCCCA
851 TTGACGCAAA TGGGCGGTAG GCGTGTACGG TGGGAGGTCT ATATAAGCAG
901 AGCTCGTTTA GTGAACCGTC AGATCGCCTG GAGACGCCAT CCACGCTGTT
951 TTGACCTCCA TAGAAGACAC CGGGACCGAT CCAGCCTCCG CGGCCGGGA
1001 CGGTGCATTG GAACGCGGAT TCCCCGTGCC AAGAGTGACG TAAGTACCGC
1051 CTATAGAGTC TATAGGCCCA CCCCCCTGGC TTCTTATGCA TGCTATACTG
1101 TTTTGGCTT GGGGTCTATA CACCCCGCT TCCTCATGTT ATAGGTGATG
1151 GTATAGCTTA GCCTATAGGT GTGGGTTATT GACCATTATT GACCACTCCC
1201 CTATTGGTGA CGATACTTTC CATTACTAAT CCATAACATG GCTCTTTGCC

Figure 6 (continued, p2/4)

1251 ACAACTCTCT TTATTGGCTA TATGCCAATA CACTGTCTTT CAGAGACTGA
 1301 CACGGACTCT GTATTTTAC AGGATGGGGT CTCATTTATT ATTACAAAT
 1351 TCACATATAC AACACCACCG TCCCCAGTGC CCGCAGTTTT TATTAAACAT
 1401 AACGTGGGAT CTCCACGCGA ATCTCGGGTA CGTGTTCCGG ACATGGGCTC
 1451 TTCTCCGGTA GCGGCGGAGC TTCTACATCC GAGCCCTGCT CCCATGCTTC
 1501 CAGCGACTCA TGGTCGCTCG GCAGCTCCTT GCTCCTAACA GTGGAGGSCA
 1551 GACTTAGGCA CAGCAGGATG CCCACCACCA CCAGTGTGCC GCACAAAGGC
 1601 GTGGCGGTAG GGTATGTGTC TGAAAATGAG CTCGGGGAGC GGGCTTGCAC
 1651 CGCTGACGCA TTTGGAAGAC TTAAGGCAGC GGCAGAAGAA GATGCAGSCA
 1701 GCTGAGTTST TGTGTTCTGA TAAGAGTCAG AGGTAACTCC CGTTGGGCTG
 1751 CTGTTAAGCG TGGAGGGCAG TGTAGTCTGA GCAGTACTCG TTGCTGCGCG
 1801 GCGCGCCACC AGACATAATA GCTGACAGAC TAACAGACTG TTCCTTTCCA
 1851 TGGSTCTTTT CTGCAGTCAC CGTCCTTAG ATCTGCTGTG CCTTCTASTT
 1901 GCCAGCCATC TGTTGTTTGC CCCTCCCCCG TGCCTTCTT GACCTTGGAA
 1951 GGTGCCACTC CCACTGTCTT TTCCTAATAA AATGAGGAAA TTGCATCGCA
 2001 TTGTCTGAST AGGTGTCATT CTATTCTGGG GGGTGGGGTG GGGCAGCACA
 2051 GCAAGGGGGA GGATTGGGAA GACAATAGCA GGCATGCTGG GGATGCGGTG
 2101 GGCTCTATGG GTACCCAGGT GCTGAAGAAT TGACCCGGTT CCTCCTGGGC
 2151 CAGAAAGAAG CAGGCACATC CCCTTCTCTG TGACACACCC TGTCCACGCC
 2201 CCTGGTTCTT AGTTCCAGCC CCACTCATAG GACACTCATA GCTCAGGAGG
 2251 GCTCCGCCTT CAATCCCACC CGCTAAAGTA CTTGGAGCGG TCTCTCCCTC
 2301 CCTCATCAGC CCACCAAACC AAACCTAGCC TCCAAGAGTG GGAAGAAATT
 2351 AAAGCAAGAT AGGCTATTAA GTGCAGAGGG AGAGAAAATG CCTCCAACAT
 2401 GTGAGGAAGT AATGAGAGAA ATCATAGAAT TTCTTCCGCT TCCTCGCTCA
 2451 CTGACTCGCT GCGCTCGGTC GTTCGGCTGC GCGAGCGGT ATCAGCTCAC

Figure 6 (continued, p3/4)

2501 TCAAAGGCGG TAATACGGTT ATCCACAGAA TCAGGGGATA ACGCAGGAAA
2551 GAACATGTGA GCAAAAGGCC AGCAAAAGGC CAGGAACCGT AAAAAAGGCG
2601 CGTTGCTGGC GTTTTTCCAT AGGCTCCGCC CCCCTGACGA GCATCACAAA
2651 AATCGACGCT CAAGTCAGAG GTGGCGAAAC CCGACAGGAC TATAAAGATA
2701 CCAGGCGTTT CCCCCTGGAA GCTCCCTCGT GCGCTCTCCT GTTCCGAGCC
2751 TGCCGCTTAC CGGATACCTG TCCGCCTTTC TCCCTTCGGG AAGCGTGCGG
2801 CTTTCTCAAT GCTCAGCTG TAGGTATCTC AGTTCGGTGT AGSTCGTTGG
2851 CTCCAAGCTG GGCTGTGTGC ACGAACCCCC CGTTCAGCCC GACCGGTGGG
2901 CCTTATCCGG TAACTATCGT CTTGAGTCCA ACCCGGTAAG ACACGACTTA
2951 TCGCCACTGG CAGCAGCCAC TGGAACAGG ATTAGCAGAG CGAGGTATGT
3001 AGGCGGTGCT ACAGAGTTCT TGAAGTGGTG GCCTAACTAC GGCTACACTA
3051 GAAGGACAGT ATTTGGTATC TGGCTCTGC TGAAGCCAGT TACCTTCGGA
3101 AAAAGAGTTG GTAGCTCTTG ATCCGGGAAA CAAACCACCG CTGGTAGCGG
3151 TGSTTTTTTT GTTTGCAAGC AGCAGATTAC GCGCAGAAAA AAAGGATCTC
3201 AAGAAGATCC TTTGATCTTT TCTACGGGGT CTGACGCTCA GTGGAAAGAA
3251 AACTCACGTT AAGGGATTTT GGTCATGAGA TTATCAAAA GGATCTTCAC
3301 CTAGATCCTT TTAAATTAAA AATGAAGTTT TAAATCAATC TAAAGTATAT
3351 ATGAGTAAAC TTGGTCTGAC AGTTACCAAT GCTTAATCAG TGAGGCACCT
3401 ATCTCAGCGA TCTGTCTATT TCGTTCATCC ATAGTTGCCT GACTCCCCGT
3451 CGTGTAGATA ACTACGATAC GGGAGGGCTT ACCATCTGGC CCCAGTGCTG
3501 CAATGATACC GCGAGACCCA CGCTCACCGG CTCCAGATTT ATCAGCAATA
3551 AACCAGCCAG CCGGAAGGGC CGAGCGCAGA AGTGGTCCTG CAACTTTATC
3601 CGCCTCCATC CAGTCTATTA ATTGTTGCCG GGAAGCTAGA GTAAGTAGTT
3651 CGCCAGTTAA TAGTTTGCGC AACGTTGTTG CCATTGCTAC AGGCATCGTG
3701 GTGTCACGCT CGTCGTTTGG TATGGCTTCA TTCAGCTCCG GTTCCCAACG

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Figure 6 (continued, p4/4)

3751 ATCAAGGCGA GTTACATGAT CCCCCATGTT GTGCAAAAAA GCGGTTAGCT
3801 CCTTCGGTCC TCCGATCGTT GTCAGAAGTA AGTTGGCCGC AGTGTATCA
3851 CTCATGGTTA TGGCAGCACT GCATAATTCT CTTACTGTCA TGCCATCCGT
3901 AAGATGCTTT TCTGTGACTG GTGAGTACTC AACCAAGTCA TTCTGAGAA
3951 AGTGTATGCG GCGACCGAGT TGCTCTTGCC CGGCGTCAAT ACGGGATAAT
4001 ACCGCGCCAC ATAGCAGAAC TTTAAAAGTG CTCATCATTG GAAAACGTTT
4051 TTCGGGGCGA AACTCTCAA GGATCTTACC GCTGTTGAGA TCCAGTTGGA
4101 TGTAACCCAC TCGTGCACCC AACTGATCTT CAGCATCTTT TACTTTACG
4151 AGCGTTTCTG GGTGAGCAA AACAGGAAG CAAAATGCGG CAAAAAGGG
4201 AATAAGGGCG ACACGGAAT GTTGAATACT CATACTCTTC CTTTTTCAAT
4251 ATTATTGAAG CATTTATCAG GGTATTGTG TCATGAGCGG ATACATATTT
4301 GAATGTATTT AGAAAAATAA ACAAATAGGG GTTCCGCGCA CATTTCCCGG
4351 AAAAGTGCCA CCTGACGTCT AAGAAACCAT TATTATCATG ACATTAACCT
4401 ATAAAAATAG GCGTATCAG AGGCCCTTTC GTC

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Figure 7: V1Jneo Sequence, SEQ. ID:14:

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1   TCGCGCGTTT CGGTGATGAC GGTGAAAACC TCTGACACAT GCAGCTCCCC
51  GAGACGGTCA CAGCTTGTCT GTAAGCGGAT GCCGGGAGCA GACAAAGCCCC
101 TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG TCGGGGCTGG CTTAACTATG
151 CGGCATCAGA GCAGATTGTA CTGAGAGTGC ACCATATGCG GTGTGAATA
201 CCGCACAGAT GCGTAAGGAG AAAATACCGC ATCAGATTGG CTATTGSCCA
251 TTGCATACGT TGTATCCATA TCATAATATG TACATTIATA TTGGGTCATG
301 TCCAACATTA CCGCCATGTT GACATTGATT ATTGACTAGT TATTAAATAGT
351 AATCAATTAC GGGGTCATTA GTTCATAGCC CATATATGGA GTTCCGCGTT
401 ACATAACTTA CGGTAAATGG CCGGCCTGGC TGACCGCCCA ACGACCCCCG
451 CCCATTGAGG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
501 CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCCCTTG
551 GCACTACATC AAGTGTATCA TATGCCAAGT ACGCCCCCTA TTGACGTCAA
601 TGACGGTAAA TGGCCCCGCT GGCATTATGC CCACTACATG ACCTTATGGG
651 ACTTTCCTAC TTGGCACTAC ATCTACGTAT TAGTCATCGC TATTACCATG
701 GTGATGCGGT TTTGGCAGTA CATCAATGGG CGTGGATAGC GGTTCGACTC
751 ACGGGGATTT CCAAGTCTCC ACCCCATTGA CGTCAATGGG AGTTTGTTTT
801 GGCACCAAAA TCAACGGGAC TTTCCAAAAT GTCGTAACAA CTCGGCCCCA
851 TTGACGCAAA TGGGCGGTAG GCGTGTACGG TGGGAGGTCT ATATAAGCAG
901 AGCTCGTTTA GTGAACCGTC AGATCGCCTG GAGACGCCAT CCACGCTGTT
951 TTGACCTCCA TAGAAGACAC CGGGACCGAT CCAGCCTCCG CGGCCGGGAA
1001 CGGTGCATTG GAACGCGGAT TCCCCGTGCC AAGAGTGACG TAAGTACCGC
1051 CTATAGAGTC TATAGGCCCA CCCCCTTGGC TTCTTATGCA TGCTATACTG
1101 TTTTGGCTT GGGGTCTATA CACCCCGCT TCCTCATGTT ATAGGTGATG
1151 GTATAGCTTA GCCTATAGGT GTGGGTATT GACCATTATT GACCACTCCC
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Figure 7 (continued, p2/4)

1201 CTATTGGTGA CGATACTTTC CATTACTAAT CCATAACATG GCTCTTTGGC
 1251 ACAACTCTCT TTATTGGCTA TATGCCAATA CACTGTCTT CAGAGACTGA
 1301 CACGGACTCT GTATTTTAC AGGATGGGGT CTCATTTATT ATTTACAAAT
 1351 TCACATATAC AACACCACCG TCCCCAGTGC CCGCAGTTTT TATTAAACAT
 1401 AACGTGGGAT CTCCACGCGA ATCTCGGGTA CGTGTTCGGG ACATGGGCTC
 1451 TTCTCCGGTA GCGGCGGAGC TTCTACATCC GAGCCCTGCT CCCATGGCTC
 1501 CAGCGACTCA TGGTCGCTCG GCAGCTCCTT GCTCCTAACA GTGGAGGCCA
 1551 GACTTAGGCA CAGCAGATG CCCACCACCA CCAGTGTGTC GCACAGGGCC
 1601 GTGGCGGTAG GGTATGTGTC TGAAAATGAG CTCGGGGAGC GGGCTTGGAC
 1651 CGCTGACGCA TTTGGAAGAC TTAAGGCAGC GGCAGAGAA GATGACGGCA
 1701 GCTGAGTTCT TGTGTTCTGA TAAGAGTCAG AGGTAAGTCC CGTTGGGGT
 1751 CTGTTAAGG TGGAGGGCAG TGTAGTCTGA GCAGTACTCG TTGCTGGCGC
 1801 GCGCGCCACC AGACATAATA GCTGACAGAC TAACAGACTG TTCTTTTCCA
 1851 TGGGTCTTTT CTGCAGTCAC CGTCTTAC ATCTGCTGTG CCTTCTAGT
 1901 GCCAGCCATC TGTGTTTTC CCTTCCCCCG TGCCTTCTT GACCTTGBAA
 1951 GGTGCCACTC CCACTGTCTT TTCCTAATAA AATGAGGAAA TTGCATCGCA
 2001 TTGCTCTGAGT AGGTGTCATT CTATTCTGGG GGGTGGGGTG GGGCAGCACA
 2051 GCAAGGGGGA GGATTGGGAA GACAATAGCA GGCATGCTGG GGATGGGGT
 2101 GGCTCTATGG GTACCCAGGT GCTGAAGAAT TGACCCGGTT CCTCCTGGGC
 2151 CAGAAAGAAG CAGGCACATC CCCTTCTCTG TGACACACCC TGTCCACGCC
 2201 CCTGGTTCTT AGTTCCAGCC CCACTCATAG GACACTCATA GCTCAGGAGG
 2251 GCTCCGCCTT CAATCCCACC CGCTAAAGTA CTTGGAGCGG TCTCTCCCTC
 2301 CCTCATCAGC CCACCAAACC AAACCTAGCC TCCAAGAGTG GGAAGAAATT
 2351 AAAGCAAGAT AGGCTATTAA GTGCAGAGGG AGAGAAAATG CCTCCAACAT
 2401 GTGAGGAAGT AATGAGAGAA ATCATAGAAT TTCTTCCGCT TCCTCGCTCA

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Figure 7 (continued, p3/4)

2451 CTGACTCGCT GCGCTCGGTC GTTCGGCTGC GCGGAGCGGT ATCAGGTCAC
 2501 TCAAAGGCGG TAATACGGTT ATCCACAGAA TCAGGGGATA ACGCAGGAAA
 2551 GAACATGTGA GCAAAAGGCC AGCAAAAGGC CAGGAACCGT AAAAAGGCGG
 2601 CGTTGCTGGC GTTTTTCAT AGGCTCCGCC CCCCTGACGA GCATCAGAAA
 2651 AATCGACGCT CAAGTCAGAG GTGGCGAAAC CCGACAGGAC TATAAAGATA
 2701 CCAGGCGTTT CCCCCTGGAA GCTCCCTCGT GCGCTCTCCT GTTCGGACCC
 2751 TGCCGCTTAC CGGATACCTG TCCGCCTTTC TCCCTTCGGG AAGCGTGGCG
 2801 CTTTCTCAAT GCTCAGGCTG TAGGTATCTC AGTTCGGTGT AGGTCTTGG
 2851 CTCCAAGCTG GGCTGTGTGC ACGAACCCCC CGTTCAGCCC GACCGGTGGG
 2901 CCTTATCCGG TAACTATCGT CTTGAGTCCA ACCCGGTAAG ACACGACTTA
 2951 TCGCCACTGG CAGCAGCCAC TGSTAACAG ATTAGCAGAG CGAGGTATGT
 3001 AGGCGGTGCT ACAGAGTTCT TGAAGTGGTG GCCTAACTAC GGCTACACTA
 3051 GAAGGACAGT ATTTGGTATC TCGGCTCTGC TGAAGCCAGT TACCTTCGGA
 3101 AAAAGAGTTG GTAGTCTTG ATCCGGCAAA CAAACCACCG CTGGTAGCGG
 3151 TGSTTTTTTT GTTTGCAAGC AGCAGATTAC GCGCAGAAAA AAAGGATCTC
 3201 AAGAAGATCC TTTGATCTTT TCTACGGGGT CTGACGCTCA GTGGAACGAA
 3251 AACTCACGTT AAGGGATTTT GGTCATGAGA TTATCAAAAA GGATCTTCAC
 3301 CTAGATCCTT TTAAATTAAA AATGAAGTTT TAAATCAATC TAAAGTATAT
 3351 ATGAGTAAAC TTGGTCTGAC AGTTACCAAT GCTTAATCAG TGAGGCACCT
 3401 ATCTCAGCGA TCTGTCTATT TCGTTCATCC ATAGTTGCCT GACTCCGGGG
 3451 GGGGGGGGCG CTGAGGTCTG CCTCGTGAAG AAGGTGTTGC TGACTCATAC
 3501 CAGGCCTGAA TCGCCCCATC ATCCAGCCAG AAAGTGAGGG AGCCACGGTT
 3551 GATGAGAGCT TTGTTGTAGG TGGACCAATT GGTGATTTTG AACTTTTGCT
 3601 TTGCCACGGA ACGGTCTGCG TTGTCGGGAA GATGCGTGAT CTGATCCTTC
 3651 AACTCAGCAA AAGTTCGATT TATTCAACAA AGCCGCCGTC CCGTCAAGTC

Figure 7 (continued, p4/4)

3701 AGCGTAATGC TCTGCCAGTG TTACAACCA TTAACCAATT CTGATTAGAA
3751 AAACATCATCG AGCATCAAAT GAAACTGCAA TTTATTTCATA TCAGGATTAT
3801 CAATACCATA TTTTGGAAAA AGCCGTTTCT GTAATGAAGG AGAAACTGCA
3851 CCGAGGCAGT TCCATAGGAT GGCAAGATCC TGGTATCGGT CTGCGATTCC
3901 GACTCGTCCA ACATCAATAC AACCTATTAA TTTCCCCTCG TCAAAATATA
3951 GGTATCAAG TGAGAAATCA CCATGAGTGA CGACTGAATC CGGTGAGAA
4001 GGCAAAAGCT TATGCATTTC TTTCCAGACT TGTTCACAG GCCAGCCATT
4051 ACGCTCGTCA TCAAAATCAC TCGCATCAAC CAAACCGTTA TTCATTGCTG
4101 ATTGCGCCTG AGCGAGACGA AATACGCGAT CGCTGTATAA AGGACATTA
4151 CAAACAGGAA TCGAATGCAA CCGGCGCAGG AACACTGCCA GCGCATCAAC
4201 AATATTTTCA CCTGAATCAG GATATTCTTC TAATACCTGG AATGCTGTTT
4251 TCCCGGGGAT CGCASTGCTG AGTAACCATG CATCATCAGG AGTACGGATA
4301 AATGCTTGA TGGTCGGAAG AGGCATAAT TCCGTCAGCC AGTTTASTCT
4351 GACCATCTCA TCTGTAAAT CATTTGGCAAC GCTACCTTTG CCATGTTTCA
4401 GAAACAATC TGGCGCATCG GGCTTCCCAT ACAATCGATA GATTGTGCGA
4451 CCTGATTGCC CGACATTATC GCGAGCCCAT TTATACCCAT ATAAATCAGC
4501 ATCCATGTTG GAATTTAATC GCGGCCTCGA GCAAGACGTT TCCCGTTGAA
4551 TATGGCTCAT AACACCCCTT GTATTACTGT TTATGTAAGC AGACAGTTTT
4601 ATTGTTTCATG ATGATATATT TTTATCTTGT GCAATGTAAC ATCAGAGATT
4651 TTGAGACACA ACGTGGCTTT CCCCCCCCCC CCATTATTGA AGCATTATATC
4701 AGGGTTATTG TCTCATGAGC GGATACATAT TTGAATGTAT TTAGAAAAAT
4751 AAACAAATAG GGGTTCCGCG CACATTTCCC CGAAAAGTGC CACCTGACGT
4801 CTAAGAAACC ATTATTATCA TGACATTAAC CTATAAAAAT AGGCGTATCA
4851 CGAGGCCCTT TCGTC

Figure 8: CMVintaBSH Sequence, SEQ. ID:13:

1 ATTGGCTATT GGCCATTGCA TACGTTGTAT CCATATCATA ATATGTACAT
 51 TTATATTGGC TCATGTCCAA CATTACCGCC ATGTTGACAT TGATTATTGA
 101 CTAGTTATTA ATAGTAATCA ATTACGGGGT CATTAGTTCA TAGCCCATAT
 151 ATGGAGTTCC GCGTTACATA ACTTACGGTA AATGGCCCGC CTGGGTGACC
 201 GCCCAACGAC CCCC GCCCAT TGACGTCAAT AATGACGTAT GTTCCCATAG
 251 TAACGCCAAT AGGGACTTTC CATTGACGTC AATGGGTGGA GTATTTACGG
 301 TAAACTGCCC ACTTGGCAST ACATCAAGTG TATCATATGC CAASTAGGCC
 351 CCCTATTGAC GTCAATGACG GTAAATGGCC CGCCTGSCAT TATGCCCAST
 401 ACATGACCTT ATGGGACTTT CCTACTTGGC AGTACATCTA CGTATTASTC
 451 ATCGCTATTA CCATGCTGAT GCGSTTTTGG CAGTACATCA ATGGGCGTGG
 501 ATAGCGSTTT GACTCAGGGG GATTTCCAAG TCTCCACCCC ATTGACGTCA
 551 ATGGGASTTT GTTTTGGCAC CAAATCAAC GGGACTTTCC AAAATGTGGT
 601 AACAACTCCG CCCCATTGAC GCAAATGGGC GGTAGGCGTG TACGGTGGGA
 651 GGTCTATATA AGCAGAGCTC GTTTAGTGAA CCGTCAGATC GCCTGGAGAC
 701 GCCATCCACG CTGTTTTGAC CTCCATAGAA GACACCGGGA CCGATCCAGC
 751 CTCCGCGGGC GGGAACGGTG CATTGGAACG CGGATTCCCC GTGCCAAGAG
 801 TGACGTAAGT ACCGCCTATA GAGTCTATAG GCCCACCCCC TTGGCTTCTT
 851 ATGCATGCTA TACTGTTTTT GGCTTGGGGT CTATACACCC CCGCTTCTTC
 901 ATGTTATAGG TGATGGTATA GCTTAGCCTA TAGGTGTGGG TTATTGACCA
 951 TTATTGACCA CTCCCCTATT GGTGACGATA CTTTCCATTA CTAATCCATA
 1001 ACATGGCTCT TTGCCACAAC TCTCTTTATT GGCTATATGC CAATACACTG
 1051 TCCTTCAGAG ACTGACACGG ACTCTGTATT TTTACAGGAT GGGGTCTCAT
 1101 TTATTATTTA CAAATTCACA TATACAACAC CACCGTCCCC AGTGCCCGCA
 1151 GTTTTTATTA AACATAACGT GGGATCTCCA CGCGAATCTC GGGTACGTGT
 1201 TCCGGACATG GGCTCTTCTC CGGTAGCGGC GGAGCTTCTA CATCCGAGCC

Figure 8 (continued, p2/2)

1251 CTGCTCCCAT GCCTCCAGCG ACTCATGGTC GCTCGGCAGC TCCTTGCTCC
1301 TAACAGTGGG GGCAGACTT AGGCACAGCA CGATGCCCCAC CACCACCACT
1351 GTGCCGCACA AGGCCGTGGC GGTAGGGTAT GTGTCTGAAA ATGAGCTCGG
1401 GGAGCGGGCT TGCACCGCTG ACGCATTGAG AAGACTTAAG GCAGCGGCAG
1451 AAGAAGATGC AGGCAGCTGA GTTGTGTGT TCTGATAAGA GTCAGAGGTA
1501 ACTCCCGTTG CCGTGCTGTT AACGGTGGAG GGCAGTGTAG TCTGAGCACT
1551 ACTCGTTGCT GCCGCGCGCG CCACCAGACA TAATAGCTGA CAGACTAACA
1601 GACTGTTTCT TTCCATGGGT CTTTCTGCA GTCACCGTCC TTAGATCTG
1651 CTGTGCTTC TAGTTGCCAG CCATCTGTTG TTTGCCCCTC CCCCCGCTC
1701 TCCTTGACCC TGGAAAGGTGC CACTCCCACT GTCCTTTCT AATAAATGA
1751 GGAAATTGCA TCGCATTGTC TGAGTAGGTG TCATTCTATT CTGGGGGGTG
1801 GGSTGGGGCA GCACAGCAAG GGGGAGGATT GGGAAAGACAA TAGCAGGCAT
1851 GCTGGGGATG CCGTGGGCTC TATGGGTACC CAGGTGCTGA AGAATTGACC
1901 CGGTTCCTCC TGGGCCAGAA AGAAGCAGGC ACATCCCCCT CTCTGTGACA
1951 CACCCTGTCC ACGCCCCCTG TTCTTAGTTC CAGCCCCACT CATAGGACAC
2001 TCATAGCTCA GGAGGGCTCC GCCTTCAATC CCACCCGCTA AAGTACTTGG
2051 AGCGGTCTCT CCCTCCCTCA TCAGCCCACC AAACCAACC TAGCCTCCAA
2101 GAGTGGGAAG AAATTAAAGC AAGATAGGCT ATTAAGTGCA GAGGGAGAGA
2151 AAATGCCTCC AACATGTGAG GAAGTAATGA GAGAAATCAT AGAATTC

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Figure 9

**Primary CTL Generation by V1J-SIV p28 gag
DNA Vaccination**

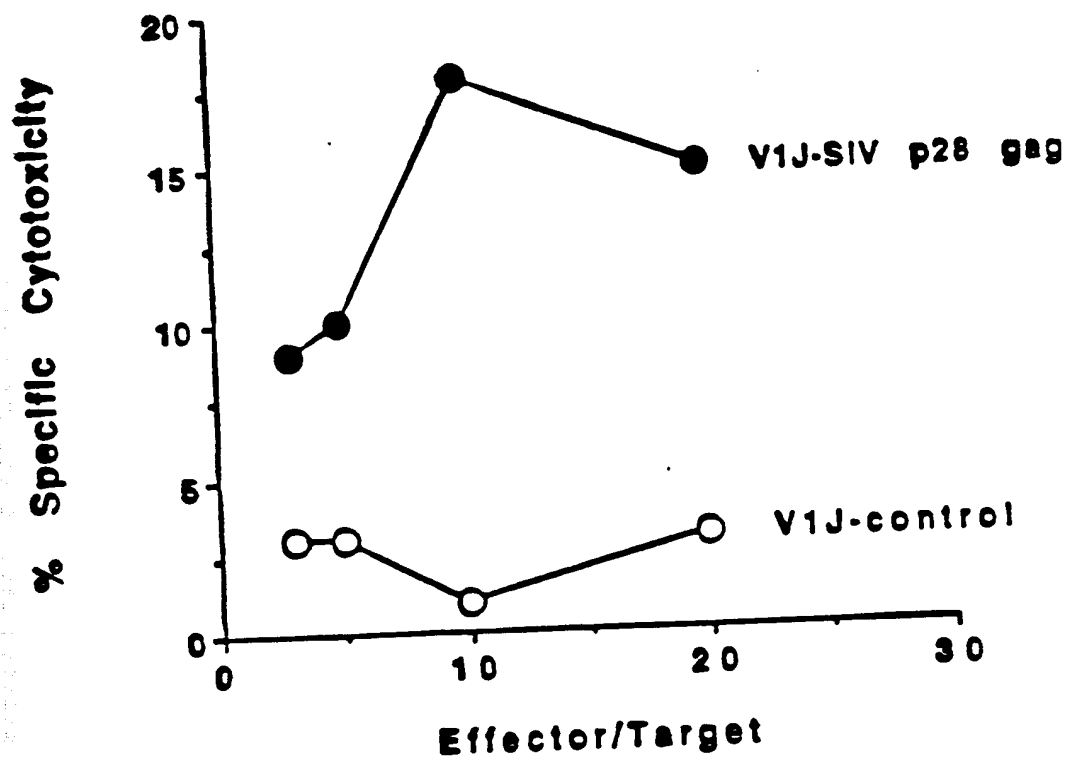
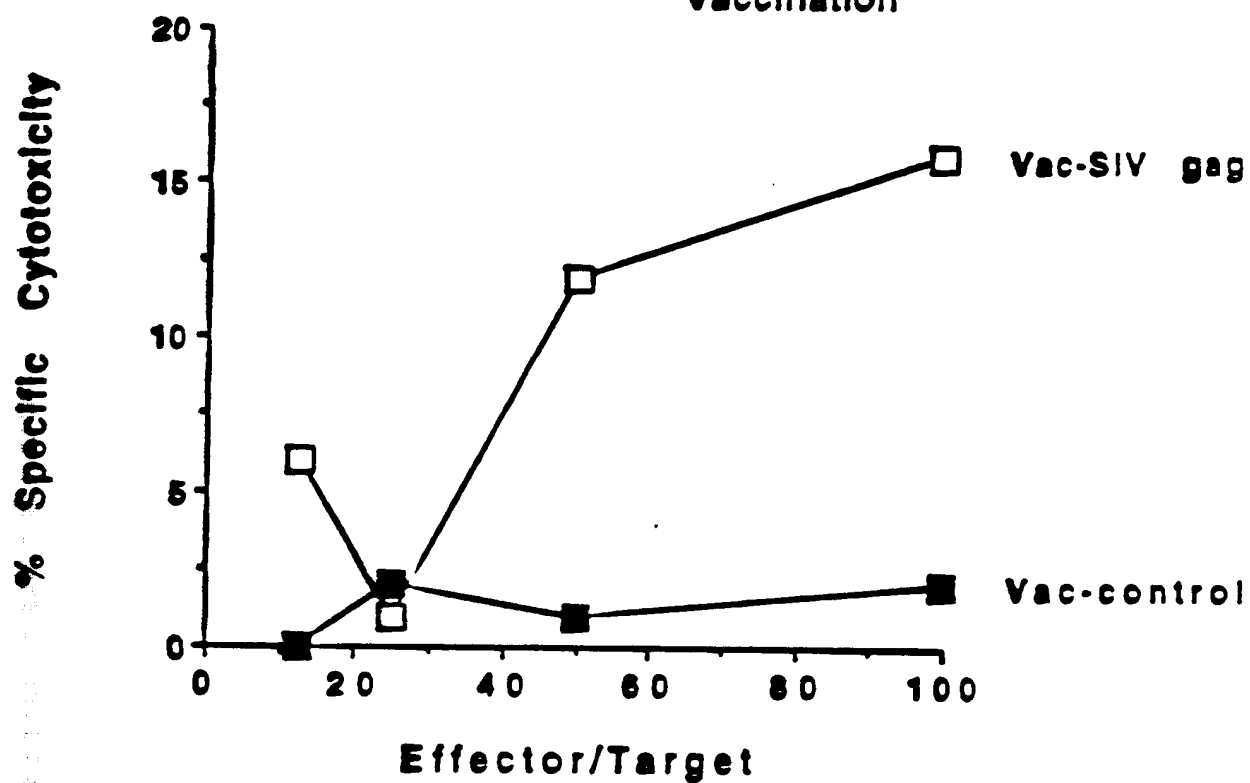


Figure 10

Primary CTL Generation by Vaccinia-SIV gag Vaccination



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FIGURE 11. VIR SEQUENCE, SEQ.ID:100:

1 GATATTGG CTATTGGCCA
251 TTGCATACGT TGTATCCATA TCATAATATG TACATTTATA TTGGCTCATG
301 TCCAACATTA CCGCCATGTT GACATTGATT ATTGACTAGT TATTAAAGT
351 AATCAATTAC GGGGTCATTA GTTCATAGCC CATATATGGA GTTCCGCGTT
401 ACATAACTTA CGGTAAATGG CCGGCTGGC TGACCGCCCA ACGACCCCGG
451 CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
501 CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCCACTG
551 GCASTACATC AAGTGTATCA TATGCCAAGT ACGCCCCCTA TTGACGTCAA
601 TGACGGTAAA TGCCCCGCGT GGCATTATGC CCASTACATG ACCTTATGGG
651 ACTTTCTTAC TTGGCAGTAC ATCTACGTAT TAGTCATCGC TATTACCATG
701 GTGATGCGGT TTTGGCAGTA CATCAATGGG CGTGGATAGC GGTTTGACTC
751 ACGGGGATTT CCAAGTCTCC ACCCCATTGA CGTCAATGGG AGTTTGTTTT
801 GGCACCAAAA TCAACGGGAC TTTCCAAAAT GTCGTAACAA CTCGCCCCCA
851 TTGACGCAAA TGSCCGGTAG GCGTGTACGG TGGGAGGTCT ATATAAGCAG
901 AGCTCGTTTA GTGAACCGTC AGATCGGCTG GAGACGCCAT CCACGCTGTT
951 TTGACCTCCA TAGAAGACAC CGGGACCGAT CCAGCCTCCG CGGCCGGGAA
1001 CGGTGCATTG GAACGCGGAT TCCCCGTGCC AAGAGTGACG TAAGTACCGC
1051 CTATAGAGTC TATAGGCCCA CCCCCTTGGC TTCTTATGCA TGCTATACTG
1101 TTTTTGGCTT GGGGTCTATA CACCCCGGCT TCCTCATGTT ATAGGTGATG
1151 GTATAGCTTA GCCTATAGGT GTGGGTATT GACCATTATT GACCACTCCC
1201 CTATTGGTGA CGATACTTTC CATTACTAAT CCATAACATG GCTCTTTGCC
1251 ACAACTCTCT TTATTGGCTA TATGCCAATA CACTGTCCTT CAGAGACTGA
1301 CACGGACTCT GTATTTTAC AGGATGGGGT CTCATTTATT ATTTACAAAT
1351 TCACATATAC AACACCACCG TCCCCAGTGC CCGCAGTTTT TATTAAACAT

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Figure 11 (continued, p2/3)

1401 AACGTGGGAT CTCCACGGGA ATCTCGGGTA CGTGTTCGGG ACATGGGCTC
 1451 TTCTCCGGTA GCGGCGGAGC TTCTACATCC GAGCCCTGCT CCCATGGCTC
 1501 CAGCGACTCA TGGTCGCTCG GCAGCTCCTT GCTCCTAACA GTGGAGGCCA
 1551 GACTTAGGCA CAGCAGGATG CCCACCACCA CCAGTGTGCC GCACAAGGCC
 1601 GTGGCGGTAG GGTATGTGTC TGAAAATGAG CTCGGGGAGC GGGCTTGCAC
 1651 CGCTGACGCA TTTGGAAGAC TTAAGGCAGC GGCAGAAGAA GATGCAGGCA
 1701 GCTGASTTGT TGTGTTCTGA TAAGASTCAG AGGTAACCTC CGTTGCGGTG
 1751 CTGTTAAGCG TGGAGGGGAG TGTASTCTGA GCASTACTCG TTGCTGCGCG
 1801 GCGCGGCCAC AGACATAATA GCTGACAGAC TAACAGACTG TTCTTTTCCA
 1851 TGGGTCTTTT CTGCASTCAC CGTCCTTAG ATCTGCTGTG CTTCTASTT
 1901 GCCAGCCATC TGTGTTTTGC CCTCCCGCG TGCCTTCTT GACCTCGAA
 1951 GGTGCCACTC CCACTGTCTT TTCTAATAA AATGAGGAAA TTGCATCGCA
 2001 TTGTCTGAST AGGTGTCAAT CTATTCTGGG GGGTGGGGTG GGGCAGCACA
 2051 GCAAGGGGGA GGATTGGGAA GACAATAGCA GGCATGCTGG GGATGGGGTG
 2101 GGCTCTATGS GTAC GGGCGCAGCGGC GTACCCAGGT GCTGAAGAA
 TGACCCGGTT CCTCGACCGT AAAAAAGGCG
 2601 CGTTGCTGCG GTTTTTCCAT AGGCTCGCGC CCGCTGACGA GCATCACAAA
 2651 AATCGACCGT CAAGTCAGAG GTGGCGAAAC CCGACAGGAC TATAAGATA
 2701 CCAGGGGTTT CCCCCTGGAA GCTCCCTCGT GCGCTCTCTT GTTCGACCC
 2751 TGCCGCTTAC CCGATACCTG TCCGCGTTTC TCCCTTCGGG AAGCGTGGCG
 2801 CTTTCTCAAT GCTCAGCTG TAGGTATCTC AGTTGGGTGT AGGTGCTTCG
 2851 CTCCAAGCTG GGCTGTGTGC ACGAACCCCG CGTTCAGCCC GACCGCTCGG
 2901 CCTTATCCGG TAACTATCGT CTTGAGTCCA ACCCGTAAG ACACGACTTA
 2951 TCGCCACTGG CAGCAGCCAC TCGTAACAAG ATTACAGAG CGAGGTATGT
 3001 AGGCGGTGCT ACAGAGTTCT TGAAGTGGTG GCCTAACTAC GGCTACACTA

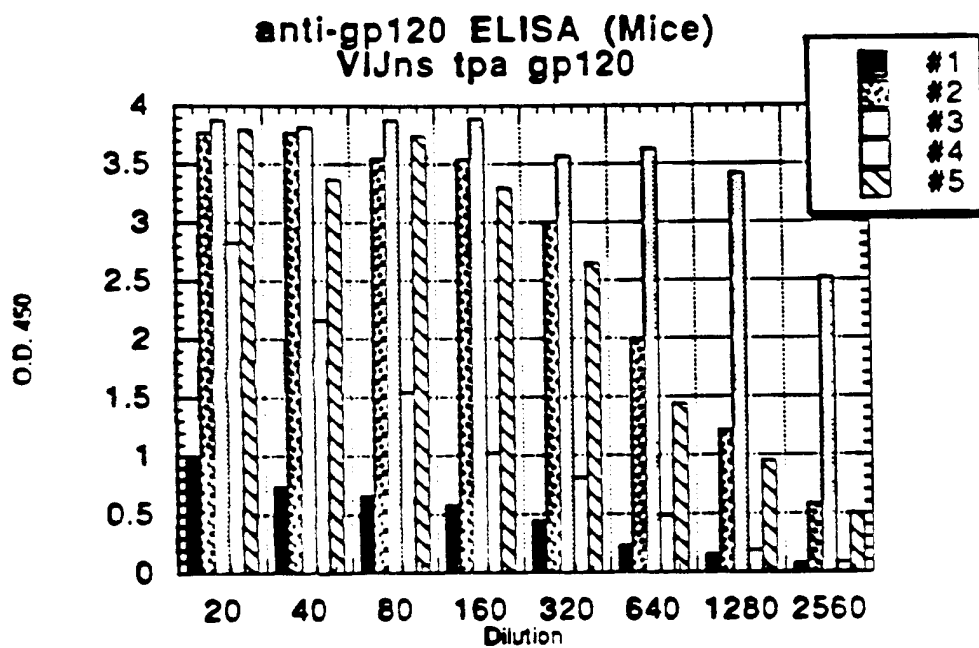
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Figure 11 (continued, p3/3)

3051 GAAGGACAGT ATTTGGTATC TGGGCTCTGC TGAAGCCAGT TACGTTGGGA
3101 AAAAGAGTTG GTAGCTCTTG ATCCGGGAAA CAAACCACCG CTGGTAGCGG
3151 TGGTTTTTTT GTTTGCAAGC AGCAGATTAC GCGCAGAAAA AAAGGATCTC
3201 AAGAAGATCC TTTGATCTTT TCTACGTGATCC CGTAATGC TCTGCCAGTG
TTACAACCAA TTAACCAATT CTGATTAGAA
3751 AAACTCATCG AGCATCAAAT GAAACTGCAA TTTATTCATA TCAGGATTAT
3801 CAATACCATA TTTTGTAAAA AGCCGTTTCT GTAATGAAGG AGAAAACTCA
3851 CCGAGGCCAGT TCCATAGGAT GGCAAGATCC TGGTATCGGT CTGGGATTCC
3901 GACTCGTCCA ACATCAATAC AACCTATTAA TTTCCCTCTG TCAAAAATAA
3951 GGTATCAAG TGAGAAATCA CCATGAGTGA CGACTGAATC CGGTGAGAAAT
4001 GGGAAAAGCT TATGCATTTT TTTCCAGACT TGTTCACAG GCGAGCCATT
4051 ACGCTCGTCA TCAAAATCAC TCGCATCAAC CAAACCGTTA TTCATTGGTG
4101 ATTGGGGCTG AGCGAGACGA AATACGGGAT CGCTGTTAAA AGGACAATTA
4151 CAAACAGGAA TCGAATGCAA CCGGCGCAGG AACACTGCCA GCGCATCAAC
4201 AATATTTTCA CCTGAATCAG GATATTCTTC TAATACCTGG AATGCTGTTT
4251 TCCCGGGGAT CGCAGTGGTG AGTAACCATG CATCATCAGG AGTACGGATA
4301 AAATGCTTGA TGSTCGGAAG AGGCATAAAT TCCGTCAGCC AGTTTAGTCT
4351 GACCATCTCA TCTGTAACAT CATTGCCAA CCTACCTTTG CCATGTTTCA
4401 GAAACAACTC TGCGGCATCG GGCTTCCCAT ACAATCGATA GATTGTGCGA
4451 CCTGATTGCC CGACATTATC GCGAGCCCAT TTATACCCAT ATAAATCAGC
4501 ATCCATGTTG GAATTTAATC GCGGCTCGA GCAAGACGTT TCCCGTTGAA
4551 TATGGCTCAT AACACCCCTT GTATTACTGT TTATGTAAGC AGACAGTTTT
4601 ATTGTTGATG ATGATATATT TTTATCTTGT CCAATGTAAC ATCAGAGATT
4651 TTGAGACACA ACGTGGCTTT CC

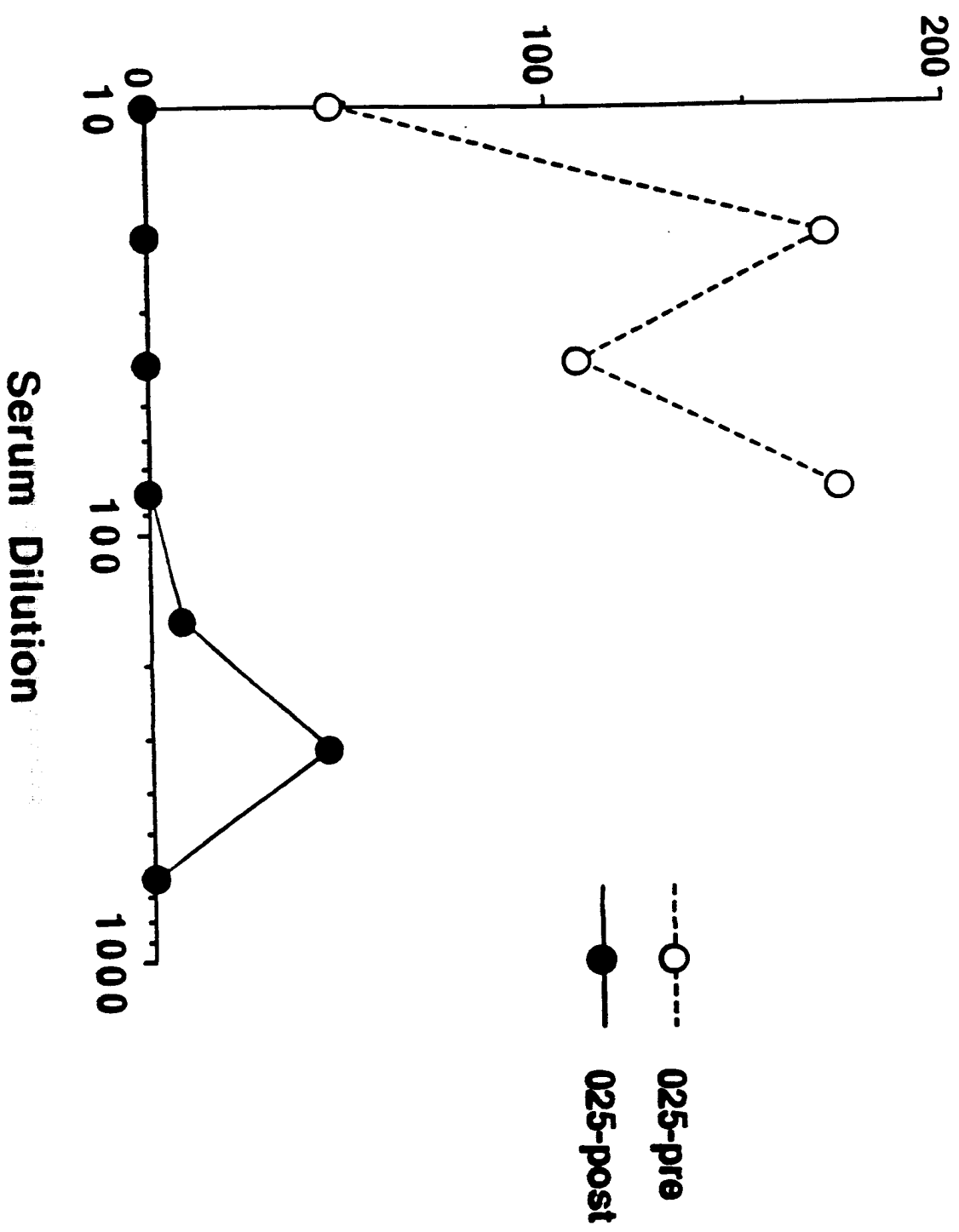
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Figure 12

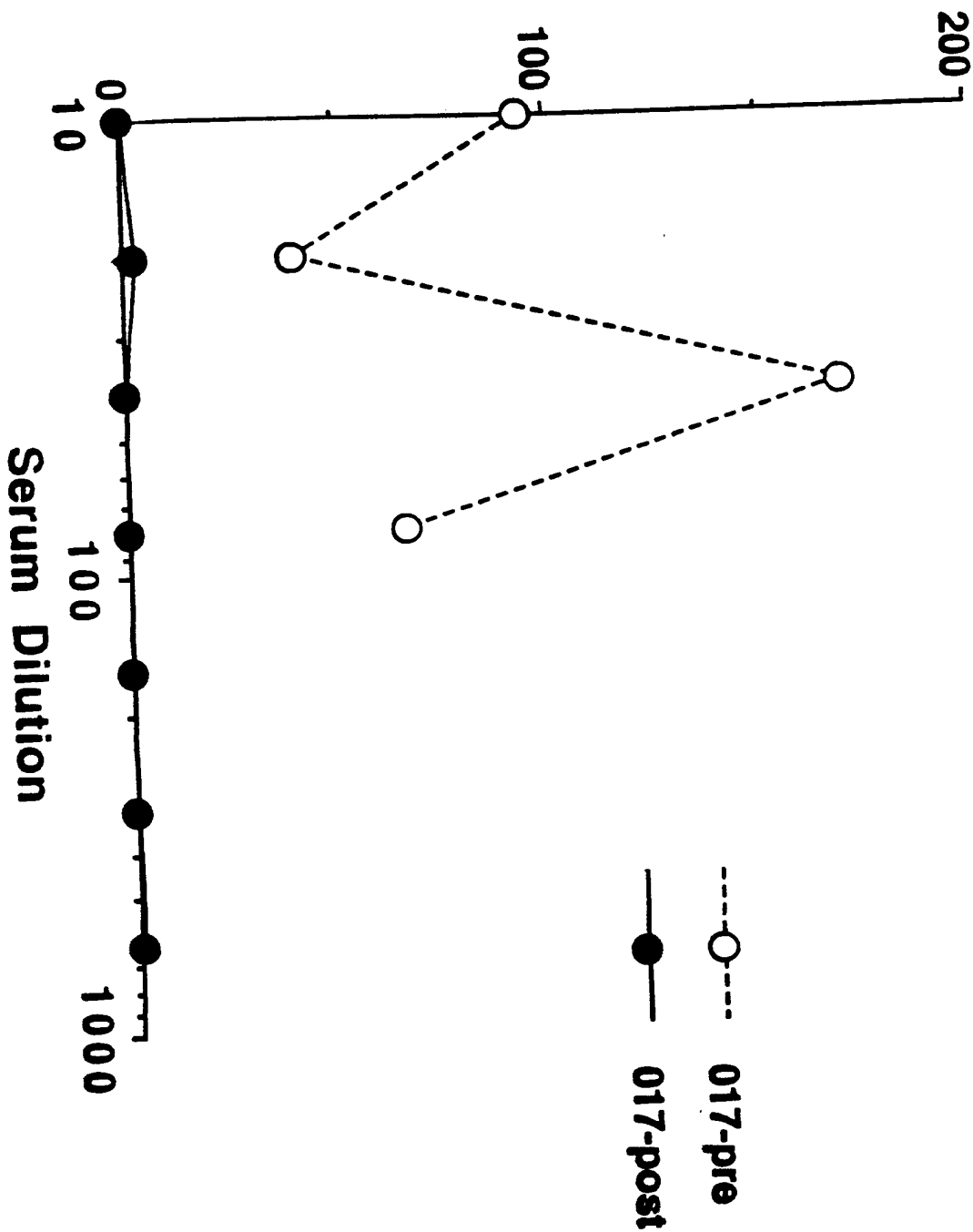


HIV MN Neutralization by Serum from tPA-gp120 DNA Immunized African Green Monkeys

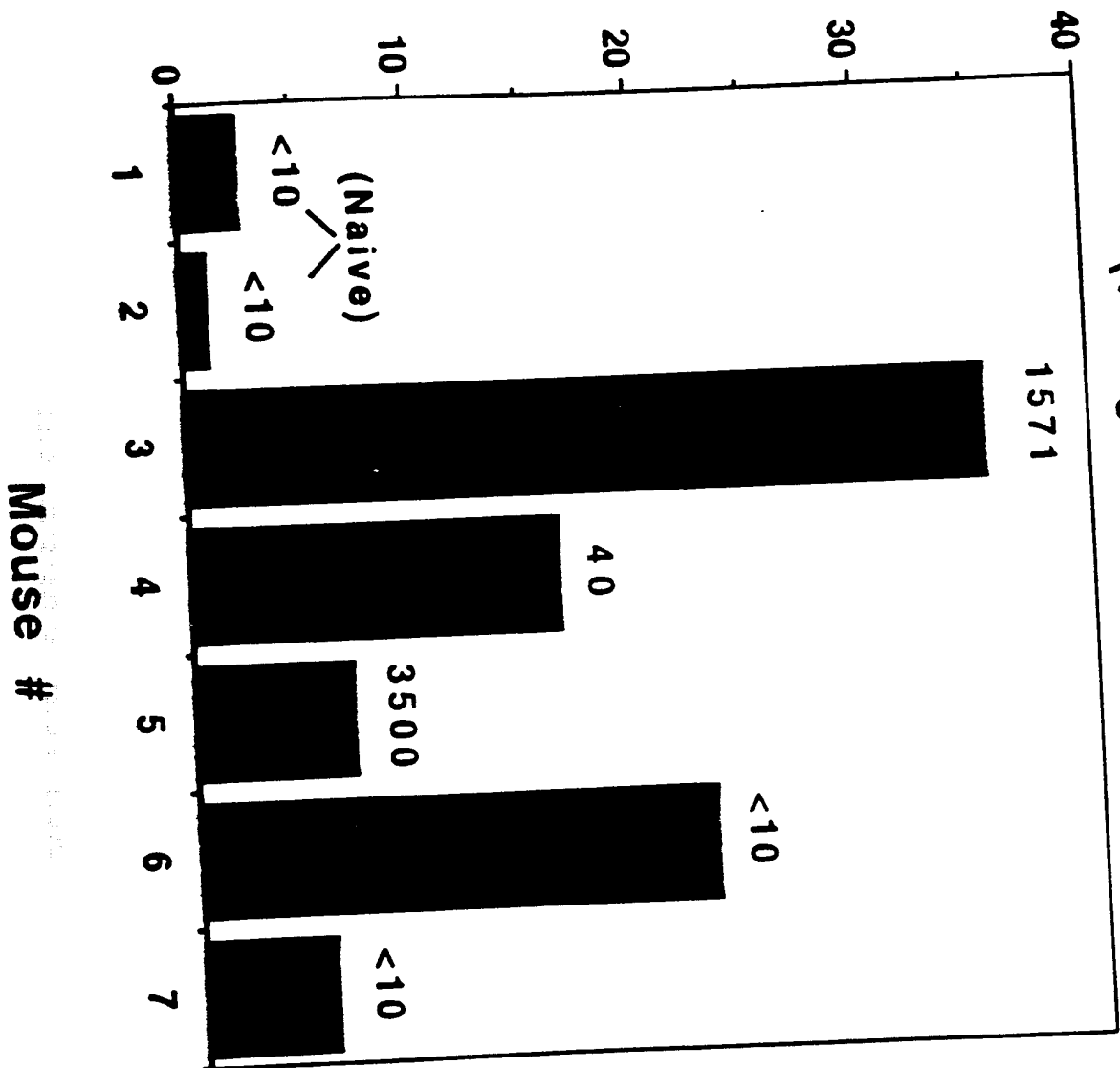
Figure 12A
p24 gag (ng/ml)



HIV MN Neutralization by Serum from tPA-gp120 DNA Immunized African Green Monkeys



T Cell Proliferation by gp120 DNA Immunized Mice- 6 months post
(1.6 ug DNA/mouse; 2X)



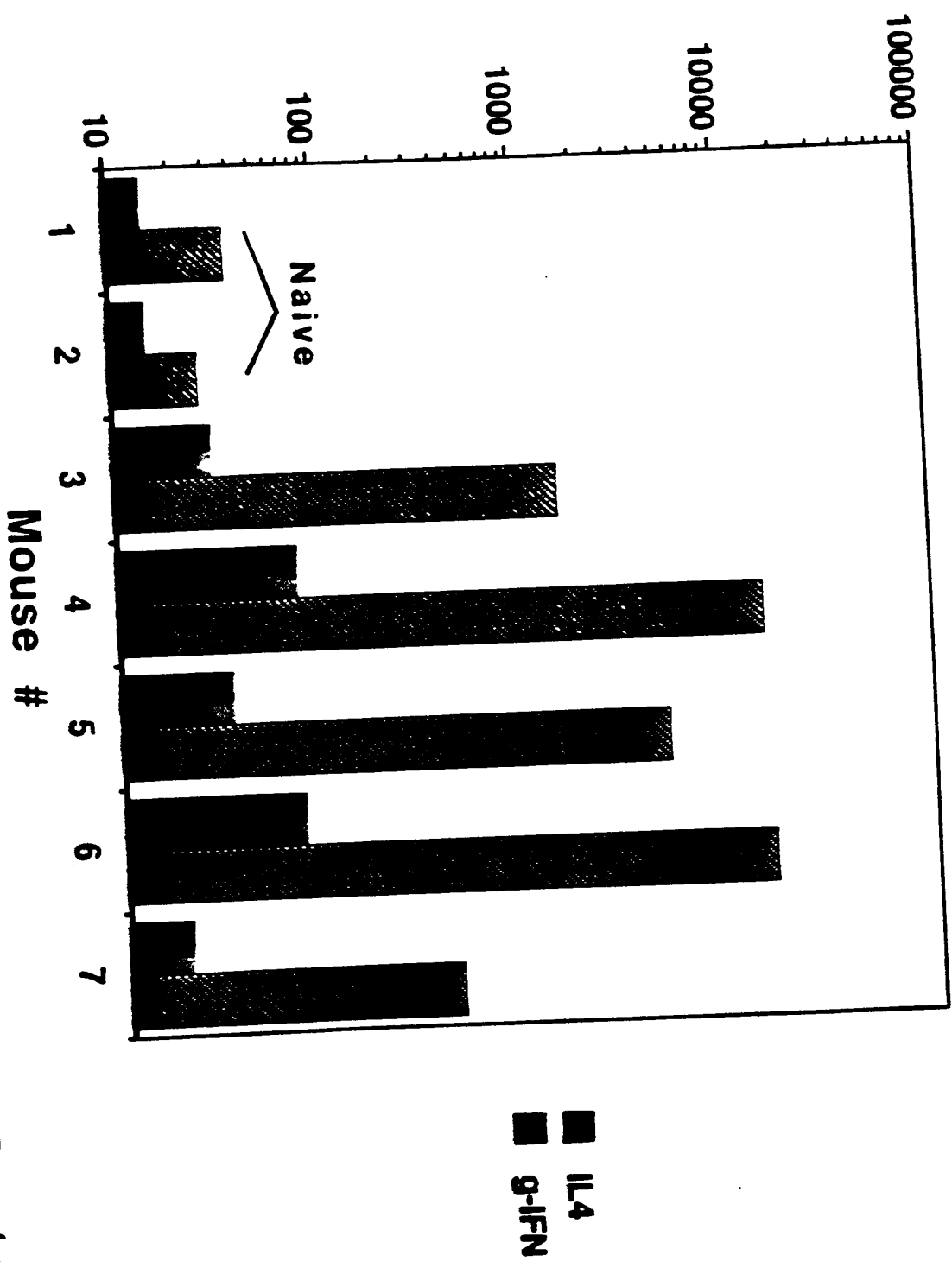
NOTE:

Anti-gp120 ELISA
titers are indicated
above each sample

FIGURE 14

In Vitro Cytokine Secretion by tPA -gp120 Vaccinees

Cytokine Concentration (pg/ml)



-Using supernatants of splenic lymphocyte cultures (using 5 ug/ml rgp120) from gp120 PNV-vaccinated mice (1.6 ug, 2X)

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FIGURE 15

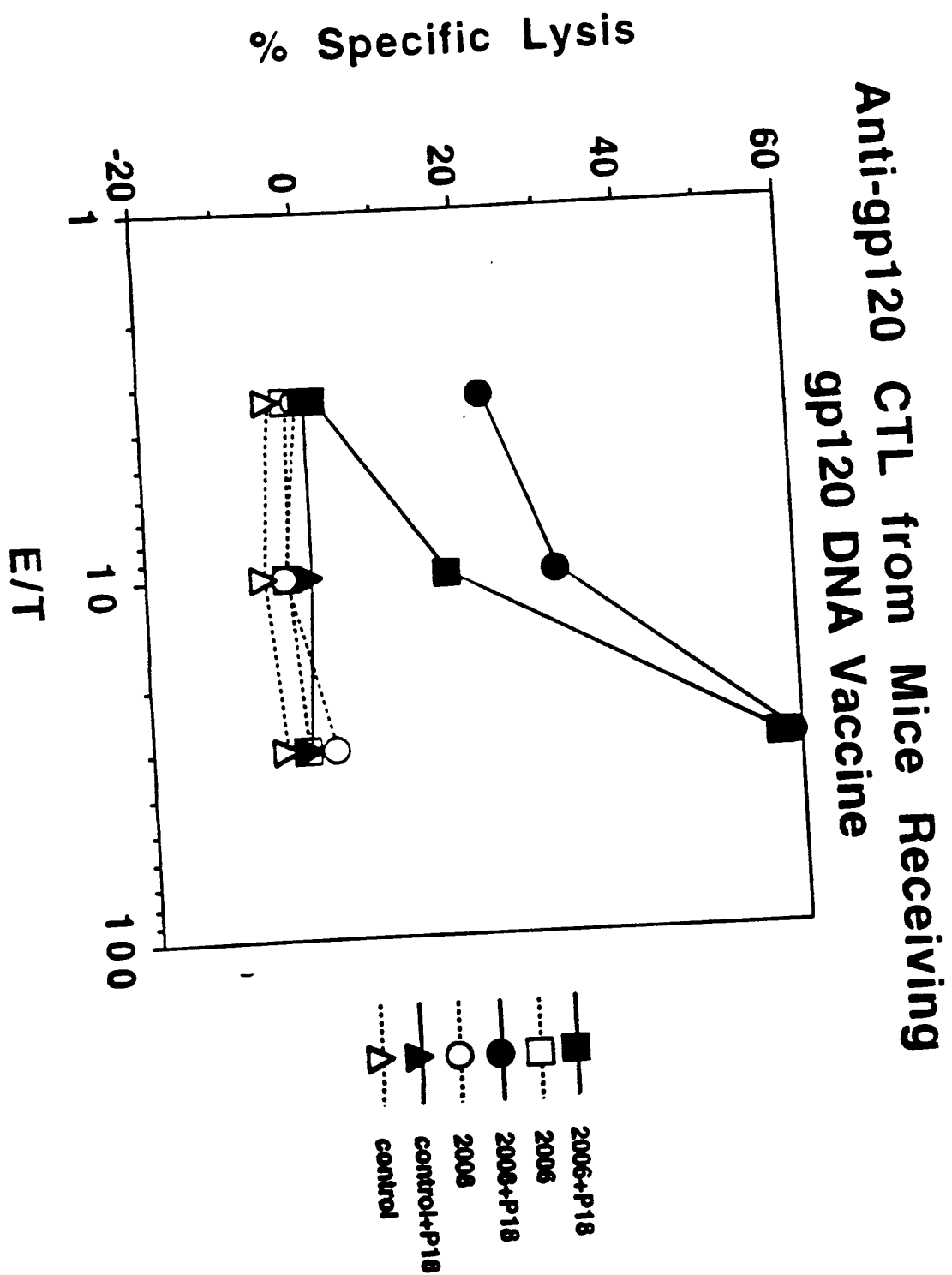


FIGURE 16

% Specific Lysis

Anti-gp120 CTL from Rhesus Monkeys
Receiving HIV env DNA Vaccine

